

Active Projects

Following is a list of the principal investigators, or institutions, of projects under way or activated in the period since the previous Report, together with the respective project titles. Completed projects are listed in a later section.

PRINCIPAL INVESTIGATOR OR INSTITUTION

PROJECT TITLE

JOHN J. ALBERS, Ph.D., *Research Associate Professor of Medicine*, University of Washington School of Medicine, Seattle.

High density lipoprotein quantitation

HARRY N. ANTONIADES, Ph.D., *Professor of Biochemistry*, Harvard University School of Public Health, Boston.

Human platelet-derived growth factor (PDGF): relationship to human atherosclerosis

THOMAS M. AUNE, Ph.D., *Adjunct in Immunology*, The Jewish Hospital of St. Louis.

Interferon—activation of suppressor T cell pathways

BERNARD M. BABIOR, M.D., Ph.D., *Professor of Medicine*, New England Medical Center Hospital, Boston.

Studies on the mechanism of activation of the respiratory burst in neutrophils

LESLIE BAER, M.D., *Associate Professor of Medicine*, Columbia University College of Physicians & Surgeons, New York.

Cigarette smoking in normotensive and hypertensive subjects: blood pressure, renin, aldosterone and catecholamine responses

BEA J. van den BERG, M.D., *Research Pediatrician, Adjunct Professor in Biostatistics*, University of California School of Public Health, Oakland.

Pulmonary function tests in adolescents and their parents—an epidemiologic approach

RICHARD J. BING, M.D., *Professor of Medicine (emeritus)*, University of Southern California School of Medicine, Los Angeles; *Visiting Associate in Biomedical Engineering*, California Institute of Technology; *Director of Cardiology and Intramural Medicine*, Huntington Memorial Hospital, Pasadena, CA.

Cholesterol inhibition and carbon monoxide and atherosclerosis

Lipoproteins and the arterial wall

DEBAJIT K. BISWAS, Ph.D., D.Sc., *Associate Professor of Oral Biology*, Laboratory of Pharmacology, Harvard School of Dental Medicine, Boston.

Effects of nicotine and benzo(a)pyrene on hormone production

IRA B. BLACK, M.D., *Professor and Chief, Division of Developmental Neurology*, Cornell University Medical College, New York.

Nicotine and neuronal development

PHYLLIS B. BLAIR, Ph.D., *Professor of Immunology*, University of California, Berkeley.

Regulation of natural killer cell activity

**PRINCIPAL INVESTIGATOR
OR INSTITUTION**

PROJECT TITLE

J. MARK BRAUGHLER, Ph.D., *Assistant Professor of Pharmacology, Northeastern Ohio Universities College of Medicine, Rootstown.*

The alteration of guanylate cyclase by nitric oxide

EDWARD BRESNICK, Ph.D., *Professor and Chairman, Department of Biochemistry, The University of Vermont College of Medicine, Burlington.*

Expression of cytochrome P450c

REBECCA BRYSON, Ph.D., *Associate Professor of Psychology, San Diego State University, San Diego, CA.*

Interactive effects of nicotine, testosterone and estradiol on weight change, food consumption and activity of male and female rats under high and low protein diets

VINCENZO BUONASSISI, M.D., *Associate Research Biologist, The University of California at San Diego, La Jolla.*

Heparan sulfate proteoglycans and blood homeostatic mechanisms

DAVID L. BUSBEE, Ph.D., *Director, Genetics Center; Associate Professor of Biological Sciences, North Texas State University, Denton.*

The biochemical and physiological characteristics of a protein which specifically binds polycyclic aromatic hydrocarbons

EDWARD J. CAMPBELL, M.D., *Assistant Professor of Medicine, Washington University School of Medicine, St. Louis.*

Modulators of inflammatory cell proteolytic activity

WILLIAM A. CARTER, M.D., *Professor of Hematology and Medical Oncology, Hahnemann Medical College, Philadelphia.*

The interplay of immunosurveillance and interferon induction in tumorigenesis

ALBERT CASTRO, Ph.D., *Director, Hormone Research Laboratory; Professor of Pathology and Medicine, University of Miami School of Medicine, Miami, FL.*

Nicotine in blood: detection by radioimmunoassay

FRANCIS C. CHAO, M.D., Ph.D., *Senior Investigator, Center for Blood Research, Boston.*

Platelet activation and blood hypercoagulability

JAN F. CHLEBOWSKI, Ph.D., *Assistant Professor of Biochemistry, Medical College of Virginia, Richmond.*

Calofimetric investigation of proteinase- α_2 macroglobulin interaction

CURT I. CIVIN, M.D., *Assistant Professor of Oncology & Pediatrics, The Johns Hopkins Oncology Center, Baltimore.*

Biochemistry and function of human granulopoietic antigens

CHARLES G. COCHRANE, M.D., *Member, Department of Immunopathology, Scripps Clinic and Research Foundation, La Jolla, CA.*

Mediation systems in inflammatory lung disease

**PRINCIPAL INVESTIGATOR
OR INSTITUTION**

PROJECT TITLE

- BERNICE H. COHEN, Ph.D., *Professor and Director, Human Genetics/Genetic Epidemiology Program, The Johns Hopkins University School of Hygiene and Public Health, Baltimore.* Genetic-epidemiologic characteristics of smokers and nonsmokers
- ROBERT W. COLMAN, M.D., *Professor of Medicine, Temple University School of Medicine, Philadelphia.* Initiation of plasma coagulation and kinin forming systems in man
- GIDON CZAPSKI, M.Sc., Ph.D., *Professor of Physical Chemistry, The Hebrew University, Jerusalem, Israel.* On the toxicity of oxygen and superoxide ion: is superoxide toxic?
- ROBERT ECHT, Ph.D., *Professor of Anatomy, Michigan State University, East Lansing.* The effects of hypoxic hypoxia, carbon monoxide and treatments influencing hypoxia toxicity on endocrine-like cells in airways of young rabbits and rabbit fetuses
- CARLTON K. ERICKSON, Ph.D., *Professor of Pharmacology, The University of Texas College of Pharmacy, Austin.* Blood-brain monitoring of sustained nicotine levels in rats
- V. GENE ERWIN, Ph.D., *Professor of Pharmacology; Dean, University of Colorado School of Pharmacy, Boulder.* Actions of nicotine on isolated perfused mouse brain
- ALVAN R. FEINSTEIN, M.D., *Professor of Medicine & Epidemiology, Yale University School of Medicine, New Haven, CT.* Effects of nicotine on neuropeptide secretion by intact mouse brain, a pharmacogenetic study
- JOSEPH D. FELDMAN, M.D., *Immunopathologist, Scripps Clinic and Research Foundation, La Jolla, CA.* Smoking, detection bias and primary lung cancer
- THOMAS H. FINLAY, Ph.D., *Associate Professor of Obstetrics and Gynecology, New York University Medical Center, New York.* Effects of aging and lipids on the immune system
- BIRGITTA FLÖDERUS-MYRRHED, Ph.D., *Assistant Professor of Environmental Hygiene, The Karolinska Institute, Stockholm.* Structure, properties and regulation of mouse plasma protease inhibitors
- JUDITH ANN FOSTER, Ph.D., *Professor and Chairperson, Department of Biology, Syracuse University, Syracuse, NY.* Epidemiologic research on the Swedish twin registries
- JACK W. FRANKEL, Ph.D., *Consultant in Medical Research, Veterans Administration Medical Center, Bay Pines, FL.* Involvement of elastin in lung disease
- ALLAN P. FREEDMAN, M.D., *Assistant Professor of Medicine, Hahnemann Medical College, Philadelphia.* Smoking and lung cancer: diagnostic test to identify persons at high risk
- The effect of cigarette smoking on the alveolar clearance rate of inert dust particles in the human lung

**PRINCIPAL INVESTIGATOR
OR INSTITUTION**

AARON E. FREEMAN, PH.D., *Staff Scientist*, California Biomedical Research Foundation, La Jolla, CA.

KJELL FUXE, M.D., *Professor of Histology*, The Karolinska Institute, Stockholm.

MORTON GALDSTON, M.D., *Associate Professor of Medicine*, New York University Medical Center, New York.

MICHAEL C. GEOKAS, M.D., PH.D., *Professor and Vice-Chairman, Department of Medicine*, University of California School of Medicine, Davis.

TERESA GESSNER, PH.D., *Associate Cancer Research Scientist*, Health Research, Inc., Roswell Park Division, Buffalo.

JACQUES E. GIELEN, PH.D., *Associate Professor, Laboratory of Medical Chemistry, Toxicology and Hygiene*, Institute of Pathology, University of Liège, Liège, Belgium.

GABRIEL C. GODMAN, M.D., *Professor of Pathology*, Columbia University College of Physicians & Surgeons, New York.

WARREN M. GOLD, M.D., *Professor of Medicine*, Cardiovascular Research Institute, University of California, San Francisco.

SIDNEY GOLDFISCHER, M.D., *Professor of Pathology*, Albert Einstein College of Medicine, The Bronx, NY.

MAURICE GREEN, M.D., *Director, Institute for Molecular Virology*, St. Louis University Medical Center, St. Louis.

MARK I. GREENE, PH.D., *Associate Professor of Pathology*, Harvard Medical School, Boston.

HIRA L. GURTOO, D.V.M., M.V. Sc., PH.D., *Associate Cancer Research Scientist, Department of Experimental Therapeutics*, Roswell Park Memorial Institute, Buffalo.

PROJECT TITLE

Rodent and human lung epithelial cell culture as a tool for carcinogenesis research *in vitro*

Epithelial cell carcinogenesis *in vitro*

Nicotine, catecholamines and neuroendocrine functions

Biochemical basis of predisposition to chronic obstructive pulmonary disease

Circulating pancreatic elastase 2 and emphysema in man

Pharmacogenetics of conjugations and lung cancer risk

Modulation of aryl hydrocarbon hydroxylase and epoxide hydratase in animal tissues and in cell culture by cigarette smoke condensate and other chemicals

Biochemical mechanism(s) and qualitative and quantitative consequences of benzo(α)pyrene metabolism

Cytoskeletal organization of the endothelial cell in regulation of shape contractility and surface movement

Effect of ozone on airway mast cells

Extracellular matrix-cytochemistry and ultrastructure

Amplification of human adenovirus transformation proteins in prokaryotic and eukaryotic cells

Suppressor cells in syngeneic tumor immunity

Role of genetics and polyaromatic hydrocarbon metabolism in human lung cancer

**PRINCIPAL INVESTIGATOR
OR INSTITUTION**

NOBUYOSHI HAGINO, M.D., Ph.D.,
*Professor of Anatomy, University of
Texas Health Science Center, San Antonio.*

CAROLINE B. HALL, M.D., *Associate
Professor of Pediatrics and Medicine,
University of Rochester School of Medicine,
Rochester, NY.*

LINDA M. HALL, Ph.D., *Associate Professor of
Genetics and Neuroscience, Albert Einstein College of Medicine of
Yeshiva University, The Bronx, NY.*

PAUL HAMOSH, M.D., *Associate Professor of
Physiology and Biophysics, and Medicine, Georgetown University
Schools of Medicine and Dentistry, Washington, D.C.*

NORMAN W. HEIMSTRA, Ph.D., *Professor of Psychology; Director, Human
Factors Laboratory, University of South Dakota, Vermillion.*

HERBERT B. HERSCOWITZ, Ph.D., *Associate Professor of Microbiology,
Georgetown University Schools of Medicine and Dentistry, Washington, D.C.*

ROBERT M. HOFFMAN, Ph.D., *Assistant Professor of Pediatrics in Residence,
University of California School of Medicine, La Jolla.*

JEROME L. HOJNACKI, Ph.D., *Assistant Professor of Biological Sciences,
University of Lowell, Lowell, MA.*

WAYNE HOSS, Ph.D., *Associate Professor, Center for Brain Research,
University of Rochester Medical Center, Rochester, NY.*

AARON JANOFF, Ph.D., *Professor of Pathology, Health Sciences Center,
State University of New York at Stony Brook, Stony Brook.*

MORRIS J. KARNOVSKY, M.B., B. CH., *Shattuck Professor of Pathological Anatomy,
Harvard Medical School, Boston.*

INGEGARD M. KEITH, Ph.D., *Assistant Professor of Anatomy, University of
Wisconsin School of Veterinary Medicine, Madison.*

PROJECT TITLE

Nicotinic receptors of LHRH axon terminals in the median eminence

Interrelationship of infectious lower respiratory tract disease in infancy, and host and environmental factors to later development of chronic lung disease

Genetic differences in nicotine sensitivity in *Drosophila melanogaster* strains

Cigarette smoke and lipoprotein remodeling by the lung

Some behavioral aspects of smoking and smoking deprivation

Effects of cigarette smoke exposure on developmental, cellular and molecular aspects of the immune response

Methionine dependence, methylation and organic transformation

Regulation of cellular oncogenes

Nicotine-induced changes in primate high density lipoproteins

Studies of nicotine interaction with blood cells

Further studies on suppression of protease inhibition by cigarette smoke

Immunologic assay of lung elastin degradation

The molecular basis of pulmonary surfactant secretion by type II pneumocytes: studies in intact cells and a cell free system

Part I: Lung neuroendocrine cell innervation

Part II: Transplacental effect of smoking on lung neuroendocrine cells in the neonate

**PRINCIPAL INVESTIGATOR
OR INSTITUTION****PROJECT TITLE**

ROBERT W. KREILICK, Ph.D., *Professor of Chemistry*, University of Rochester, Rochester, NY.

Investigations of the interaction of nicotine with membranes

KLAUS E. KUETTNER, Ph.D., *Professor and Chairman*, Department of Biochemistry, Rush College of Health Sciences and Rush Medical College, Rush-Presbyterian-St. Luke's Medical Center, Chicago.

Local regulation of normal and pathologic invasion

Regulation of proliferation of invasive cells

LAWRENCE L. KUPPER, Ph.D., *Associate Professor of Biostatistics*, University of North Carolina School of Public Health, Chapel Hill.

Verification of a statistical age-period-cohort analysis of lung cancer

ABEL LAJTHA, Ph.D., *Director*, New York State Research Institute for Neurochemistry and Drug Addiction, New York.

Genetic basis for nicotine response

DON LAPENAS, M.D., *Assistant Professor of Pathology*, University of Vermont College of Medicine, Burlington.

The association of inorganic dust deposition with pulmonary neoplasia in tobacco users

E. CLINTON LAWRENCE, M.D., *Assistant Professor of Medicine*, Baylor College of Medicine, Houston.

Effects of cigarette smoking on immunoglobulin production by human bronchial lymphocytes

PHILIP M. LE QUESNE, Ph.D., D.Sc., *Professor of Chemistry*, Northeastern University, Boston.

Assay of oxygenated sterols in human blood vessels—a feasibility study

FABIAN J. LIONETTI, Ph.D., *Research Professor of Biochemistry*, Boston University School of Medicine, Boston.

Phagocyte mediated injury to tissues

GESINA L. LONGENECKER, Ph.D., *Associate Professor of Pharmacology*, University of South Alabama College of Medicine, Mobile.

Studies of platelet and endothelial prostanoic acid production as possible cardiovascular risk indicators in smokers

RONALD B. LUFTIG, Ph.D., *Professor of Microbiology and Immunology*, University of South Carolina School of Medicine, Columbia.

Interactions between RNA tumor viruses and chemical carcinogens

HENRY T. LYNCH, M.D., *Professor and Chairman*, Department of Preventive Medicine and Public Health, Creighton University School of Medicine, Omaha.

Genetic and biomarker studies of smoking-associated cancers

BRUCE A. MACHER, Ph.D., *Assistant Professor of Pharmaceutical Chemistry*, University of California, San Francisco.

Chemistry and biology of complex carbohydrates

ALAN C. McLAUGHLIN, Ph.D., *Biophysicist*, Brookhaven National Laboratory, Upton, NY.

Interaction of divalent cations with model and biological membranes

**PRINCIPAL INVESTIGATOR
OR INSTITUTION**

PROJECT TITLE

J. WISTER MEIGS, M.D., *Clinical Professor of Epidemiology; Director, Connecticut Cancer Epidemiology Unit, Yale University School of Medicine, New Haven, CT.*

Review of lung cancer in Connecticut, 1935-present

FERID MURAD, M.D., Ph.D., *Professor of Medicine and Pharmacology, Stanford University, and Chief of Medicine, Palo Alto V.A. Hospital, Stanford, CA.*

Mechanism of nitric oxide activation of guanylate cyclase

Role of cyclic GMP in smooth muscle relaxation

JAY A. NADEL, M.D., *Professor of Medicine, Physiology and Radiology, Cardiovascular Research Institute, University of California, San Francisco.*

Mechanisms of airway hyperirritability

DONALD J. NELSON, Ph.D., *Associate Professor of Chemistry, Clark University, Worcester, MA.*

Spectroscopic studies of the interaction of cholinergic ligands with nicotinic receptor proteins

HAROLD H. NEWBALL, M.D., *Associate Professor of Medicine, The Johns Hopkins University School of Medicine, Baltimore.*

The role of proteases and antiproteases in pulmonary emphysema

FRANZ OESCH, Ph.D., *Professor of Pharmacology; Head, Section on Biochemical Pharmacology, University of Mainz, Mainz, West Germany.*

Metabolic fate and toxicological significance of dihydrodiols derived from polycyclic aromatic hydrocarbons occurring in cigarette smoke

BENDICHT U. PAULI, D.V.M., *Associate Professor of Pathology, Rush Presbyterian-St. Lukes Medical Center, Chicago.*

Local regulation of tumor invasion by host-derived proteinase inhibitors

DENNIS R. PETERSEN, Ph.D., *Assistant Professor of Pharmacology, University of Colorado School of Pharmacy, Boulder.*

Influences of genotype, sex and chronic cigarette smoking on nicotine and alcohol metabolism in mice

JULIA M. POLAK, D.Sc., M.D., *Senior Lecturer in Histopathology, Royal Postgraduate Medical School, Hammersmith Hospital, London.*

Investigation of the role of regulatory peptides in human lung disease

WILLIAM A. PRYOR, Ph.D., *Boyd Professor of Chemistry, Louisiana State University, Baton Rouge.*

Free radical chemistry of cigarette smoke

ILARI RANTASALO, M.D., *Professor and Chairman, Department of Public Health Science, University of Helsinki, Helsinki, Finland.*

The Finnish Twin Cohort Follow-up Study

RONALD E. RASMUSSEN, Ph.D., *Associate Adjunct Professor in Community and Environmental Medicine, University of California College of Medicine, Irvine.*

The role of cell-specific toxins in mouse lung carcinogenesis

**PRINCIPAL INVESTIGATOR
OR INSTITUTION**

PROJECT TITLE

EILEEN REMOLD-O'DONNELL, Ph.D., *Principal Research Associate, Harvard Medical School; Investigator, Center for Blood Research, Boston.*

Purification and functional analysis of elastase from guinea pig macrophages

JOHN E. REPINE, M.D., *Assistant Director, Webb-Waring Lung Institute; Associate Professor of Medicine, University of Colorado Health Sciences Center, Denver.*

Basic mechanisms of lung injury from inhaled oxidants

HERBERT Y. REYNOLDS, M.D., *Professor of Medicine; Head, Pulmonary Section, Yale University School of Medicine, New Haven, CT.*

Respiratory secretions in pulmonary carcinoma: secretory component of immunoglobulin-A as an early marker of epithelial dysfunction

Markers of epithelial cell dysfunction in respiratory secretions of smokers

VIRGINIA L. RICHMOND, Ph.D., *Research Associate, Pacific Northwest Research Foundation, Seattle.*

Elastic fiber microfibrillar protein structure

PETER M. ROSS, Ph.D., *Research Associate, The Rockefeller University, New York.*

DNA damage and selective maintenance of animal genes

UNA S. RYAN, Ph.D., *Research Professor of Medicine, University of Miami School of Medicine, Miami, FL.*

Interactions of hormones with cells of the pulmonary vascular wall

B. V. RAMA SASTRY, D.Sc., Ph.D., *Professor of Pharmacology, Vanderbilt University School of Medicine, Nashville, TN.*

Influence of nicotine on the release of acetylcholine in the human placenta and its implications on the fetal growth

ISHAIAHU SCHECHTER, Ph.D., *Senior Lecturer in Biochemistry, The George S. Wise Faculty for Life Sciences, Tel Aviv University, Tel Aviv, Israel.*

Effect of thiols and disulfides on cholesterol metabolism

GERALD SHKLAR, D.D.S., *Charles A. Brackett Professor of Oral Pathology; Head, Department of Oral Medicine and Oral Pathology, Harvard School of Dental Medicine, Boston.*

Oral carcinogenesis, vitamin A and retinoids

ROBERT J. SKLAREW, Ph.D., *Research Associate Professor of Pathology, New York University Research Service, Goldwater Memorial Hospital, Roosevelt Island, New York.*

Cytokinetics of heteroploid subpopulations by imaging

HANOCH SLOR, Ph.D., *Associate Professor of Human Genetics, Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel.*

The use of specific antibodies to monitor the formation and removal of benzo-(α)pyrene adducts from DNA of damaged human cells

DENNIS M. SMITH, Ph.D., *Assistant Professor of Biological Sciences, Wellesley College, Wellesley, MA.*

Autonomic control of pulmonary surfactant in the adult lung

**PRINCIPAL INVESTIGATOR
OR INSTITUTION**

PROJECT TITLE

TIMOTHY A. SPRINGER, Ph.D., *Assistant Professor of Pathology, Harvard Medical School, Boston.*

Studies of macrophage subpopulations and differentiation using monoclonal antibodies

ERIC J. STANBRIDGE, Ph.D., *Associate Professor of Microbiology, University of California, Irvine.*

Transfer of specific individual human chromosomes to recipient cells

DANIEL STEINBERG, M.D., Ph.D., *Professor of Medicine; Head, Division of Metabolic Disease, The University of California at San Diego, La Jolla.*

Arterial degradation of low density lipoproteins *in vivo*

THOMAS P. STOSSEL, M.D., *Chief, Medical Oncology Unit, Massachusetts General Hospital, Boston.*

Functional anatomy of the lung macrophage

D. LANSING TAYLOR, Ph.D., *Associate Professor of Biology, Harvard University, Cambridge, MA.*

Chemotaxis of macrophages

JAMES TRAVIS, Ph.D., *Professor of Biochemistry, The University of Georgia, Athens.*

Proteolytic enzymes and inhibitors in emphysema

EMIL R. UNANUE, M.D., *Mallinckrodt Professor of Immunopathology, Harvard Medical School, Boston.*

Physiopathology of normal and activated macrophages

STEPHEN F. VATNER, M.D., *Associate Professor of Medicine, Harvard Medical School, New England Regional primate Research Center, Southboro, MA.; Associate in Medicine, Peter Bent Brigham Hospital, Boston.*

Direct effects of nicotine on brain circulation

PETER N. WALSH, Ph.D., *Professor of Medicine, Temple University School of Medicine, Philadelphia.*

Interaction of platelets with coagulation factors IX and X

GEORGE WEINBAUM, Ph.D., *Bioscientist, Pulmonary Disease Section, Albert Einstein Medical Center, Philadelphia.*

Bronchioalveolar lavage of human smokers and nonsmokers: studies on cell chemotaxis, enzyme release and cellular ultrastructure

I. BERNARD WEINSTEIN, M.D., *Professor of Medicine and Environmental Sciences, Columbia University, New York.*

Development of monoclonal antibodies to carcinogen-DNA adducts

SIGMUND A. WEITZMAN, M.D., *Assistant Professor of Medicine, Hematology—Oncology Unit, Massachusetts General Hospital, Boston.*

Studies of phagocyte—induced mutation

AKE WENNMALM, M.D., *Associate Professor of Clinical Physiology at Karolinska Institute, Huddinge Hospital, Huddinge, Sweden.*

Nicotine as inhibitor of prostaglandin formation: localization of the inhibitory step and characterization of the cardiovascular implications

JOHN T. WILSON, Ph.D., *Assistant Professor of Cell and Molecular Biology, Medical College of Georgia, Augusta.*

The isolation and expression of human α -1-antitrypsin gene sequences through molecular cloning

**PRINCIPAL INVESTIGATOR
OR INSTITUTION**

ALVIN WINTERS, Ph.D., *Assistant Professor of Medical Microbiology, Veterans Administration Medical Center, Bay Pines, FL.*

BRUCE A. WODA, M.D., *Associate Professor of Pathology, University of Massachusetts, Worcester.*

STANLEY YACHNIN, M.D., *Professor of Medicine and Chief, Section of Hematology/Oncology, The University of Chicago Medical Center, Chicago.*

PROJECT TITLE

Effects of smoking on the inherent interferon levels in control and cancer patients: a pilot study

Cell surface membranes, integral membrane proteins and cytoskeleton in lymphocytes from: (1) young and old rats; (2) spontaneous rat lymphomas

Models for the pathogenesis of atherosclerosis: A) biological effects of oxygenated sterol compounds; B) mevalonic acid and cholesterol biosynthesis and the biosynthesis and regulation of cell growth